

In the latter part of November, vast prairie fires occurred in the far West, and several *dust storms*, filling the air with fine and impalpable particles, which are known to remain suspended in the air for many days, and sometimes are finally precipitated with water, forming the celebrated "*black rain*."

The hail-storm at Nashville on the 18th was so sudden in its approach that none suspected it, and the streets were lined and thronged. The hail-stones were about the size of almonds, and generally very smooth and even in form, and covered the ground to a depth of an inch. The hail-storm originated with a smooth sheet of stratus cloud, supplanting a low-moving scud, and a sudden shift of wind from south to northwest.

THE RIVERS.

These will be seen in the table on the precipitation chart (No. 2), right side. It will be observed there was an extraordinary rise in the Mississippi, at Cairo, Memphis, and Vicksburg, from the 18th to the 30th of December. This was caused by the enormous floods in the Ohio and its tributaries from the 9th to the 18th ultimo, on which last-named day the Ohio was 44 feet and 2 inches above the low-water mark. It will be seen from the table that all the Western water courses have been full during the past month—a fact which gives promise for the next season's agricultural yield.

The excessive rains which found their way early in December to the upper Ohio, were probably due to the projection of the cold polar current in the rear of the great storm of December 3 and 4, already described. The cold current served to condense the vast floating reservoirs of vapor which the cyclone had drawn to its eastern side and front from the Gulf of Mexico.

CAUTIONARY SIGNALS.

During the month of December there were hoisted at American ports sixty-three cautionary signals, and for Canadian ports thirty-four storm premonitions were telegraphed.

The display of cautionary signals on the Lakes was suspended after the 10th of December, by which time navigation was entirely closed.

Out of the whole number of storm-warnings displayed at all American ports, four are doubtfully justified, but the number known to have been *actually justified* is forty-seven, which gives as the percentage of verification 73.43. The office has no returns to show how many were verified at the Canadian ports.

The display of these signals at the various ports was generally respected, and the confidence in their accuracy may be seen by the reports of their reception, of which a few specimens may be given: Thus, at Alpena, Mich., when on the 1st a storm-signal was displayed, "steamers in port delayed going out till morning of the 2d." At Boston, Mass., December 26, after signal was displayed, "all shipping remained in port." At New Haven, December 23, "the warning attracted considerable attention in the city, owing to the subsequent snow." At Wilmington, N. C., December 26, "the signal was generally heeded by mariners and those engaged in shipping-business." Similar reports frequently come from Chicago and other sea-ports.

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